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Academy Panel Urges Caution

A Chilly Assessment of NSF's Plans for More Centers

A blue-ribbon panel convened by the National Academy of Sciences has issued a grudging endorsement of the National Science Foundation's plans to set up a new batch of campus-based research centers. But, giving NSF Director Erich Bloch more than he requested in commissioning a review of the centers program, the panel echoed academic fears that the centers may erode NSF's traditional support for "little science." The 11-member panel, drawn from academe and industry, was chaired by Richard N. Zare, Professor of Chemistry at Stanford University. The report is a shrewdly composed warning notice, rather than the technocratic checkup that Bloch solicited from the Academy.

The centers provide "one valuable mode of research support," the panel conceded in its report, *Science and Technology Centers: Principles and Guidelines* (37

pages, no charge, NAS, 2101 Constitution Ave. NW., Room 206, Washington, DC 20418; tel. 202/334-1681). But it warned that "There is a risk that a significant portion of federal funds and university resources will be diverted from the support of individual investigators, especially if the Foundation budget remains static or declines."

Research centers have become a sensitive issue in the Bloch regime because he is pushing them hard at the Foundation (SGR June 1, 1987). He was also influential in getting the President to endorse them as a government-wide objective in his last State of the Union message. NSF's program of Engineering Research Centers was already well underway at the time—it now totals 13 centers, with several more to be announced soon, for a

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House Blocks Construction Fund Request for Super Accelerator

The campaign for the Superconducting Super Collider (SSC) particle accelerator has hit a non-fatal snag on Capitol Hill, but it's still a worrisome development for backers of the \$4.4-billion project.

By a vote of 340-80, the House on June 24 adopted an Energy and Water Development Appropriations bill that did not contain the \$10 million that the Department of Energy requested as an initial construction budget for SSC. The money was initially cut out by the Subcommittee on Appropriations for Energy and Water Development, and the cut was endorsed by the full Committee and then the House. But at all levels, approval was voted for \$25 million to continue research and development on the SSC.

The view from DOE is that without that construction money, the SSC lacks statutory standing and remains vulnerable to an assortment of criticisms, ranging from the lack of promised foreign cost-sharing to doubts about the big machine's place in national research priorities. DOE also contends that the task of signing up foreign governments is made more difficult by the lack of a clear Congressional commitment to the project.

But with representatives of European high-energy physics having directly told the Congress that the burdens of their own programs leave no margin for contributing to the SSC's costs, Congressional skep-

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In Brief

The Science Boom? The American Geological Institute reports "slightly more than 4 percent of the entire geoscience profession categorizing themselves as 'unemployed.'" The main cause is the sagging energy industry, according to a preliminary report on AGI's forthcoming North American Survey of Geoscientists. Actual unemployment may be higher, AGI says, because "Many recently unemployed were difficult to sample adequately and many others appeared reluctant to take on that designation if they were working elsewhere."

Meanwhile, industrial chemists are feeling the effects of mergers, acquisitions, and other economic turmoil. The latest report of the American Chemical Society's Committee on Professional Relations reports completed investigations of "multiple terminations" at 10 companies involving 400 "chemical professionals" between March 1985 and December 1986; still under investigation are terminations that occurred at seven other firms between March 1986 and February 1987. Compliance with ACS termination criteria has improved, ACS reports, but some firms still fall short on advance notice, severance pay, and other items.

From testimony to the House Science, Space, and Technology Committee, concerning federal funds for laboratory construction, by Sister Jean O'Laughlin, President of Barry University, an undergraduate institution in Miami Shores, Fla.: "\$1 million to Barry University is vital; \$1 million to Stanford University is pocket money"—a sum that "would probably go unnoticed."

... Panel Chose the Questions It Wanted to Address

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planned budget total of \$48 million next year. In addition, in response to the presidential design that Bloch recommended, NSF is hoping to spend another \$30 million next year for starting up some dozen or so Science and Technology Centers. It's the latter group that the Academy panel addressed in four days of meetings in February and March.

Bloch sent a fairly narrow series of questions to the Academy, asking the panel—selected by the Academy—to identify “promising areas of science” for the centers, the role of the centers in economic competitiveness, their “governance” and conditions of support, educational role, and “sunset” relations. He did not ask the panel to address the centers’ relationship to NSF’s traditional role as supporter of solo science. Nor did he invite random thoughts that might occur to the panel.

The response, however, reads in large part like a brief for little science, rather than a blueprint for the new centers. The preface notes that “the panel has taken a broad view of its charge to advise the Foundation. Aware that the President’s proposal and the Foundation’s response have caused some concern in the scientific community, the panel has considered how to ensure that centers encourage individual initiative and scientific innovation.”

“The major issue in inaugurating a new program of Science and Technology Centers,” the report states, “is one of balance among modes of research support. The single investigator with a small research team remains the appropriate mode for many fields of scientific inquiry. This mode has the advantages of pluralism, decentralization, and flexibility to move in new directions as opportunities unfold. Individual investigator support has been enormously successful for the National Science Foundation. Its preeminence must not be diminished.”

Moving up the scale of organization, the panel approvingly took note of “group projects.” Smaller and less formal than centers, “They are concentrated in the materials, physical, and biological sciences . . . Groups typically involve a few researchers collaborating or simply sharing equipment. They usually lack an administrative structure, an educational mission independent of university departments, and the ability to fund promising new projects; but,” the panel concluded, “they have many of the virtues of single investigator projects and they should be treated as favorably.”

Turning to its assigned topic, centers, the panel stated that they imply “a larger scale activity with a formal management and organization structure.” They are “an important part of the Foundation’s funding portfolio,” the report acknowledged but without a taint of enthusiasm. “In view of the need to support more collaborative research and build university infrastructure in many ar-

eas where progress is otherwise limited, centers should be expanded as one component of increased research funding.”

Referring to a meeting with NSF Director Bloch, the panel said he assured the members “that although he envisages a three-fold increase in the total number of NSF centers [by 1992], the centers will still represent only about 10 percent of the Foundation’s budget.” To which the panel report comments: “In the event that the additional funds are not appropriated as anticipated, the panel believes that the Science and Technology Centers program should be reduced proportionately.”

In response to the assignment from Bloch, the panel said the centers should be campus-based, “integrated into academic programs,” concentrated on basic research, and involved in “intellectual exchanges with researchers in other scientific fields and in industry, government, and other sectors.” It also advised a nine-year duration for federal funding, and a separate bookkeeping account at NSF to keep track of the money. The panel shrugged off Bloch’s request for suggestions of the “most promising areas of science” for the centers, stating that “identifying a small number of candidate areas might inadvertently steer researchers from areas of even greater promise or prejudice the review.”

Bloch got all this advice for a mere \$78,500 under an NSF contract to the Academy. The report was delivered only 15 weeks after he asked for it—fast and cheap in terms of some of the glacial performances that the organization has turned in for its federal agency clientele.

Serving on the panel with Chairman Zare were: Norman Bradburn, University of Chicago; Praveen Chaudhari, IBM; Ernest Jaworski, Monsanto; Daniel Kleppner, MIT; Joshua Lederberg, Rockefeller University; Donald J. Lewis, University of Michigan; William Press, Harvard; Leon T. Silver, Caltech; Larry Smarr, University of Illinois; Joseph Varner, Washington University.

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The Bloch & Schmitt Show: NSF Chiefs Meet the Press

NSF Director Erich Bloch usually chats with the press for half an hour or so following the monthly meeting of the National Science Board, NSF's policymaking body. Often joining him is Board Chairman Roland W. Schmitt, GE Senior Vice President, who was there for the latest press session, June 19. Also taking part was Raymond E. Bye, Director of NSF's Office of Legislative and Public Affairs. Following are excerpts, transcribed and edited by SGR.

Q. NSF announced in 1985 that requests for facilities would be considered in conjunction with applications for research projects. Why is it that so few have come in?

Bloch. We've been wondering ourselves. I'll give you what some people put forward: People, PI's (principal investigators), universities, realizing what the Foundation's total budget is, they also focus—just like we do—on people and equipment. It's essentially a realization by the community itself of the limitation of the Foundation. That could be one explanation.

Q. Could it be that an investigator might fear it will cost him points if he, in effect, is admitting he doesn't have the facilities?

Bloch. I would hope not, because we made just the opposite point: If you need a facility upgrade or new facilities to do your job, come forward with it. The worst thing you can do is come forward with a proposal and

then if somebody looks at the details, they will know quite well that the individual or the group doesn't have the wherewithal to do it. That would be really a negative on a proposal.

Schmitt. Another aspect of it is the reflection of the long-term, short-term point of view. You always think you can get by with even poor facilities for a little while longer, if you just get the money to do your research. And so you keep putting that off, basically. I think that, by and large, the academic side of the community is tempted to do that.

Q. But your Policy Research and Analysis group just put out a paper [Infrastructure: The Capital Requirements for Academic Research, see box on page 4 for excerpt] that says that facilities don't appear to be in such bad shape, that they're being taken care of by state appropriations and private sources.

Bloch. I think that's somewhat of an overstatement on your part summarizing that particular report. I think the report very clearly acknowledges that there is a problem. That's the main point. The second thing, however, that the report also says is, by the way, there is some action—and it's not federal action. It's state and private resources and university resources. And, if you look at the totality of what is going on, it's not unimpressive. But I think the report very clearly says there is a prob-

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31 Governors Join in Appeal to Congress to Proceed with SSC

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tics dismiss DOE's Catch-22 whines as just another example of the Department's willingness to say anything that will further its cause. After all, DOE Secretary John Herrington has said, "I wouldn't be surprised if we get a quarter to 50 percent of this project" financed by other nations (SGR Vol. XVII, No. 3). Everyone else would be absolutely astonished.

The view from Congress is that there's no need to hurry to a commitment to build the SSC. The site-selection process is just starting up and isn't scheduled to produce a decision until January 1989. Since a new President will be taking office that month, the durability of the site decision is open to doubt.

Meanwhile, the hankering for the machine around the country has produced a plea to get on with it from 31 governors. The gubernatorial alliance for the SSC is founded on the reality that for any one of them to get it, there first has to be an SSC. The governors displayed their unity on that issue in a letter dated June 19 to Robert A. Roe (D-NJ), Chairman of the House Science, Space, and Technology Committee, and J. Bennett Johnston (D-La.), Chairman of the

Senate Energy and Natural Resources Committee.

Since it is unseemly to address the "pork" value of the project, the governors took the high road, noting that "The SSC is a symbol of this nation's willingness and commitment to remain at the forefront of scientific research. For this reason, we have placed our individual proposals aside for a moment and joined together to demonstrate our collective support for this critical project."

As previously announced by DOE, the task of conducting a germ-free site-selection review has been entrusted to the National Academy of Sciences (NAS), which did the same work in the 1960's scramble for what eventually became the Fermilab. The Academy has appointed a 19-member committee, chaired by Edward A. Frieman, Director of the Scripps Institution of Oceanography. Frieman was an Assistant Secretary of DOE and Director of the Office of Energy Research in the Carter Administration.

For sorting through the applications and selecting perhaps half a dozen that meet the site criteria, the Academy will be paid \$750,000.

... Support of People Comes Ahead of New Buildings

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lem. We all agree with that.

Q. It also says the problem can be solved in a year or two.

Bloch. No, it doesn't say it will be solved in a year or two.

Q. But it does say that projections of the money that's going into it is going to solve the problem without additional federal money.

Bloch. I didn't interpret it quite that way.

Bye. Also, I'd encourage you to look at the front page of that report. It does say a report by Policy Research and Analysis, but it is not an NSF report.

Q. Are you disavowing it?

Bloch. No. If you look at our survey, which is an official survey [*Science and Engineering Research Facilities at Doctorate-Granting Institutions*, September 1986]—it was quickie kind of a survey compared with what we're going to put in place for next year. Nevertheless, it pointed out the fact that if you look out into the future, there was quite a bit of activity going on there, that people have planned quite a bit of activities. The problem with that is those are plans, and you never know if plans materialize.

In the meantime, a couple of things have happened. The new tax law is certainly not favorable to some of these plans, because of the limitation on the dollars that an institution can get on a tax-free kind of a basis. So, there are a lot of ifs on any kind of a projection.

Facilities Problem is "Serious"

Q. How serious do you think the facilities problem is?

Bloch. I think it is serious, no doubt about it. The support of people and the support of equipment is serious also. Now it comes down to optimizing between the three. And my view on that one is that the Foundation has done the right thing by optimizing and setting the priorities on people, equipment, and facilities, in that order.

Schmitt. There are other sources of funding support to be tapped into. You know, a deal that states frequently like is to put up facilities on the basis of getting programs into those facilities. So, what one would hope is that a lot of that would go on, and I think there is evidence that many states have that kind of orientation.

Bloch. But I disagree on the long-term, short-term one, because the long-term one is people. You can build a building in 18 months. You can't educate a scientist in 18 months. It takes 10 or 15 years. So, if you miss a generation by essentially saying—I'll grab a bad example—let's discontinue all graduate fellowships and take the money and put it in facilities, then you have lost a

US Funds Unneeded, Study Says

The following is from the concluding section of *Infrastructure: The Capital Requirements for Academic Research*, a report by NSF's inhouse think tank, the NSF Division of Policy Research and Analysis. (PRA Report 87-3, May 1987, 25 pages, no charge, from: NSF, 1800 G St. NW, PRA, Room 1233, Washington, DC 20550; tel. 202/357-9689.)

These survey results indicate that even in the absence of a major influx of Federal funds, universities have followed various investment strategies of their own, responding to both the physical and scientific needs of their faculty. Given the response of state governments and the private sector, the need for a new Federal investment strategy in university research facilities remains an open question.

The Federal government has never been an important funder of research facilities relative to other funders, particularly in the recent past. The public universities are principally funded by state governments, and private universities principally by endowments and gifts. The private university infrastructure is currently in relatively good condition. These facts must be considered to determine the Federal government's facilities support role relative to the states and the universities themselves.

New survey data suggest that in 1987, universities will be spending \$1.5 billion per year to build and maintain their infrastructure. This implies that an adequate long-term funding rate may have been achieved, and that the facilities shortage problem may be declining. Research and development has become an economic development issue at state level, and consequently a target of state funding for other than traditional educational reasons.

generation.

Schmitt. There's no difference between what Erich said and what I was saying. From the individual investigator's point of view, there's a long-term, short-term kind of tradeoff where he isn't looking at the kind of long-term thing that Erich was just remarking on. He's just looking at his own research, how it's being conducted today.

Q. Does the Roe bill suggest a bureaucratic as well as political nightmare for NSF? [a reference to HR 1905, "University Research Facilities Revitalization Act," introduced by Rep. Robert A. Roe (D-NJ), which would provide \$250 million a year in federal funds to match]

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... Doubts Proposed Fund Would End "Pork" Issue

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other sources of finance for academic research construction]. You'd have to deal with universities, the states, and Congress, which will still be concerned with providing facilities to their own people.

Bloch. If you saying, will it get us out of the "pork" problem? I would say, probably not. But I think a bill like that could be administered. It wouldn't be the easiest thing in the world, but we've done it once before.

Schmitt. It will help the pork problem, because it will reduce the pressures from the field. If you go back and look at the original [National] Science Board report on it, the point we made there was that the pork-barrel activity was a reflection of a real need out there, and that people out in the field were desperate and taking whatever path they could find to get what they need. And our theory of the case then, and I think it's still true, is that if you have in place programs—either state programs or federal to attack the real problem—that you'd at least reduce the pressure of people out there

stimulating the pork-barrel process.

Q. We have quite a few research buildings now that have been erected via the pork-barrel route. Is there anything to suggest that the quality of science going on inside those buildings is lower than in those that have gone through the strictest merit review?

Schmitt. I don't think we've even looked to see where the funded programs of NSF are going.

Q. People using those buildings presumably compete through the peer-review process for project grants.

Bloch. We haven't made a study. And obviously, the programs go to many different types of institutions. Someone mentioned Columbia [University, which holds a pork-barrel grant for a chemistry building]. I'm sure it's different there than it is somewhere in podunk.

Q. How are you doing about getting the Russians back into the ocean-drilling collaboration? [a reference to the Soviets' admission to the multi-national Ocean Drilling Project headed by NSF, and their sudden exclusion, at

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Bloch Does His Duty—Testifies Against Construction Funds

NSF Director Erich Bloch last week glumly performed the duty of a Presidential appointee: In line with the White House's opposition to new domestic spending, he spoke against Congressionally initiated legislation that would revive a big federal role in financing construction of university research facilities.

The performance occurred before the House Committee on Science, Space, and Technology, at the opening of hearings on the University Research Facilities Revitalization Act of 1987 (HR 1095), sponsored by Committee Chairman Robert A. Roe (D-NJ).

Bloch noted that while there's a lot of lab construction and renovation in academe, "it tends to be concentrated in the top 50 schools." He added that "the work in progress is not sufficient to meet the apparent need" and "most researchers and university administrators believe that lack of facilities limits their ability to conduct research projects."

The proposed legislation, designed to put up buildings and quell pork-barrel construction raids on agency budgets, would provide \$250 million a year in federal funds over 10 years, with a requirement for non-federal matching. Fifteen percent of the construction fund would be reserved for institutions that receive less than \$10 million annually in federal research funds.

Bloch then came to the conclusion that was realistically expected in a hearing room crowded with seasoned academic lobbyists: "The proper priorities for

NSF remain people, equipment, and facilities, in that order. Thus any new program must be viewed in the context of all established programs and evaluated competition with other high-priority programs. To do otherwise, does not accept the reality of the overall budget situation, and at the risk of compromising the standards of excellence we have worked so hard to maintain.

"Thus, while we support much of the intent and spirit of HR 1905," Bloch said, "we must oppose the bill. With its very large authorization, the bill simply cannot be accommodated within the current fiscal climate."

Recognizing the Director's plight, the Committee members were gentle and didn't bash him with his own statistics. The political reality of the Roe bill is that it is an authorization for a program for which the Congressional budgeting process could not possibly muster any money for next year. Furthermore, the White House has indeed been good to NSF in budget matters, calling for a doubling of its budget from this year's level to \$3.2 billion by 1992.

After Bloch testified, a long succession of academic witnesses warmly endorsed the Roe bill. They included the presidents of Johns Hopkins, Atlanta University, Tougaloo College, and the Rochester Institute of Technology. Also supporting the bill were representatives from the AAAS, the New Jersey Commission on Science and Technology, the Einstein College of Medicine, and the Whitehead Institute.

BU's Silber Assails Distribution of R&D Support

The following is from testimony June 25 before the House Science, Space, and, Technology Committee by John Silber, President of Boston University, concerning the University Research Facilities Revitalization Act (HR 1905). Silber, whose university has successfully taken the pork-barrel route to federal funds for facilities, was virtually alone in criticizing the bill, which is intended to quell such tactics by establishing a "merit-reviewed" federal fund for laboratory construction.

I do not believe the national interest is being well served when year after year, the bulk of the nation's federal research funds are channelled to a handful of already wealthy research universities. Yet that is the current state of affairs, and this unfair concentration of resources, hobbles the nation's overall research enterprise.

For example, in Fiscal year 1985 . . . a mere 10 research universities—less than 2 percent of the total of 653—received 25.9 percent of federal R&D [academic] funding and 28.3 percent of NSF funding. Just 20 research institutions received 40.8 percent of federal R&D funding and 44 percent of NSF funding. If we add the funds appropriated for the Federally Funded Research and Development Centers, which are located at

the same universities that already get the lion's share of the research money, we find that the top 20 universities received more than half—a full 55.56 percent—of all federal R&D dollars allocated to universities.

The dense concentration of NSF funding is particularly inappropriate because the NSF's statutory mandate explicitly requires it to avoid the undue concentration of research resources . . . This narrow channelling of a huge percentage of federal research support to only a tiny handful of schools is relentlessly promoted by the schools that benefit from it and by their organizational representatives, such as the Association of American Universities. They claim it is the only way that the quality of American science can be preserved. This is demonstrably not true, for we have seen how Congressional initiatives to provide excellent facilities to universities outside the top 20 have enabled those universities to attract teams of first-rate scientists who, once appointed, compete successfully for research funds through the traditional system of peer review.

It is essential to recognize that there is great scientific potential in this country that is waiting to be tapped. We should recall that the scientific breakthroughs leading to

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the direction of the Pentagon.]

Bloch. We're doing poorly, obviously. The program will survive, obviously. It will cost us \$2.5 million more [the Soviet participation fee] than we had anticipated.

Q. *Do you think the Soviet presence actually posed some security risk?*

Bloch. That was the reason for declining them, essentially.

Q. *But, in fact, was there a security problem? Originally, you were going to admit them.*

Bye. That's not our judgment to make.

Bloch. Look, that's right. The point is that we looked at it from the viewpoint of scientific participation, what the benefits would be. Obviously, the benefits that we saw were easier access to their waters, obviously. Secondly, they have a well-developed scientific base in that particular area. So, we looked at it for the benefit from a science viewpoint. There also were [other] considerations. And those were determining ones.

Q. *Senator Pell [Chairman of the Senate Foreign Relations Committee] says this reversal came about when the Defense Department and a new White House Science Adviser came into the picture [SGR June 15, 1987].*

Bloch. That's his opinion.

Q. *Do you think he's wrong in saying that?*

Bloch. That's his opinion.

To the Editor:

Fetal Research

In discussing the Congressional Biomedical Ethics Board (June 1, 1987), SGR left the impression that federal restrictions on fetal research are set to expire in October 1988. Such an impression is incorrect.

In August 1975, the Department of Health, Education, and Welfare, since succeeded by the Department of Health and Human Services (HHS), published regulations pertaining to fetal research. The regulations have been continuously in effect since that date, and there are no "sunset" provisions incorporated in them or their authorizing statutory language. HHS is not considering any action that would withdraw, terminate, or modify them. Under Section 498 of the Public Health Service Act, as amended by PL 99-158, the Secretary of HHS may not, under 45 CFR 46.211, modify or waive any of the restrictions of the regulations for fetal research until November 21, 1988.

As you point out, the report of the Congressional Biomedical Ethics Board, on the advisability of any waiver of the risk standard set forth in this regulation, is due six months before November 21, 1988.

Charles R. MacKay
Acting Director, Office for
Protection from Research Risks,
National Institutes of Health

... Says Roe Bill Is a "Money Machine" for the AAU

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the development of the long focal-length, high-resolution cameras that are the basis of satellite photography, national technical intelligence means, and other remote-sensing technology were made—not at one of the well-established research centers—but more than 30 years ago in Boston University's then-modest Physics Department.

And more recently, where were the dramatic breakthroughs in high-temperature superconductivity achieved? Not at Harvard or MIT, but at the University of Houston and the University of Alabama at Huntsville. I am President of a university located on the banks of the Charles River, but I am not so parochial as to think that the scientific genius of America is confined to the banks of the Charles . . .

Incidentally, "merit review" used to be called "peer review." But it frequently happens that when a particular kind of behavior comes to be recognized as less than admirable, the behavior is given another name. That is what happened to peer review . . .

Those who argue for peer review portray it as an objective process, rather than as the old-boy network it actually is . . . In other words, peer reviewers award the largest grants to their own or similar institutions.

Senate Committee OKs NBS Bill

A bill reorganizing the National Bureau of Standards and renaming it the National Institute of Technology has been approved, 20-0, by the Senate Commerce, Science, and Transportation Committee, but its progress through the rest of the legislative mill is extremely uncertain. Following Committee approval, on June 16, the bill was incorporated into the Omnibus Trade bill (S. 1420) now under debate in the Senate.

Titled the Technology Competitiveness Act of 1987 (S. 907), the NBS legislation authorizes the establishment of regional centers—jointly funded by federal and non-federal sources—to transfer technology from the NBS's manufacturing research programs to small and medium-size firms. In addition, the bill authorizes grants to small firms for working with advanced technologies, plus a fund of "seed money" to assist multi-company joint research ventures.

The bill was introduced by Committee Chairman Ernest F. Hollins (D-SC). Parts of the bill are duplicated in legislation that has been introduced in the House, but there is no single bill there that resembles the Senate version. Meanwhile, the House Science, Space, and Technology Committee has passed the annual NBS authorization without the extensive changes contained in the Senate bill.

Recent distributions of NSF funds for Engineering Research Centers and associated computer facilities illustrate the same pattern. Four out of four of the Computer centers and four out of six of the Engineering Research Centers awarded in 1985 went to schools already among the top 20 recipients of federal funds. And not a single one of these awards went to a university in the South, the Southwest, or the West . . .

I can understand why the Association of American Universities is on record as supporting the peer-review provision of HR 1905. As we have seen, this provision is a money machine for AAU member institutions.

DOE Energy Research Head Picked

Robert Hunter, President of Western Research Corporation, of San Diego, is the White House's choice to head the Department of Energy's Office of Energy Research, the government's main funder of nuclear and high-energy physics research. The post has been vacant since April, when Alvin W. Trivelpiece left to become Executive Officer of the American Association for the Advancement of Science.

Hunter's firm is a defense contractor, mainly engaged in laser research, a good deal of it for the Strategic Defense Initiative. Hunter was a member of the White House Science Council from 1982-84. One of his major responsibilities as head of DOE's Office of Energy Research will be to shepherd the Superconducting Super Collider through the perils of Capitol Hill. His appointment will require Presidential nomination and confirmation by the Senate.

SGR Summer Schedule

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A Comparative Analysis of the Science and Technology Organization, Policies, and Priorities: France, Germany, Japan, Sweden, United Kingdom, and United States, a useful distillation of a great deal of comparative data in a mere 18 pages, prepared by Leonard L. Lederman, head of analytical studies in the National Science Foundation's Science Resources Studies Division, for a conference in Bonn May 26-27 on National Research and Technology Systems in Western Industrialized Countries.

Available without charge from National Science Foundation, Division of Science Resources Studies, Room L-602, 1800 G St. NW, Washington, DC 20550; tel. 202/634-4625

Effectiveness of Small Business Innovation Research Program Procedures (GAO/RCED-87-63, 46 pages, no charge). Adopted in 1982 over White House opposition, the SBIR program requires most big federal research agencies to award 1.25 percent of their R&D funds to small firms—which works out to a total of \$450 million this year; awards can run up to \$50,000 for an initial exploratory phase, to \$500,000 for advanced development. GAO review of the 12 participating agencies concludes that they're employing high standards for judging applications, but that the review time is needlessly long and still growing. The SBIR program has awarded \$1.1 billion since its startup, and its original 1988 expiration date was extended last year to 1993.

Available from the US General Accounting Office, PO Box 6015, Gaithersburg, Md. 20877; tel. 202/275-6241

The Federal Contribution to Basic Research, (38 pages) background materials prepared for the House Science, Space, and Technology Subcommittee on Science, Re-

Foreigners Out of Big Meeting

The Administration has hung out an Americans-only sign for the superconductivity superbowl it's holding in Washington on July 28-29—and the capital embassy circuit is ringing with rage. Convened by the White House Science Office and the Department of Energy, the invitation-only meeting is focused on commercialization. It's expected to be attended by 3000 industrial and business representatives and 300 researchers.

A European science attache told SGR the closed-door rule is particularly grating in view of the US quest for foreign money for the space station and the SSC accelerator. The US response is that commercialization is the meeting topic, and there's no reason to admit the competition. The press, however, will be allowed in, and, of course, there are no secrets when thousands are in the know. The exclusion of foreigners is said to be the brainchild of White House Science Adviser William R. Graham.

search, and Technology by Michael E. Davey and Genevieve Knezo of the Congressional Research Service, Science Policy Research Division, Library of Congress. Provides all the basic numbers on the postwar federal role in financing basic research and related educational activities. The report notes that "Defense-related projects now account for one-third of the nation's total R&D effort, public and private, with the Pentagon supporting 70 to 80 percent of R&D funding for such advanced technologies as lasers, artificial intelligence, and advanced computing."

Reports from the Congressional Research Service are not directly available to the public, but are available to members of Congress, who usually will respond to a constituent's request for a copy. Specify that the request is for a Congressional Research Service science policy report and give the exact title.

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